



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,638	12/14/2001	Bodan Ma	1979.EEM	9225

7590 12/03/2003
Jane E. Gennaro
Assistant General Counsel, I.P.
NATIONAL STARCH AND CHEMICAL COMPANY
10 Finderne Avenue
Bridgewater, NJ 08807-0500

EXAMINER

MITCHELL, JAMES M

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/020,638

Applicant(s)

MA ET AL.

Examiner

James M. Mitchell

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-11 is/are rejected.
- 7) ☒ Claim(s) 6 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/2/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 7-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the first composition is a liquid and cured. A cured composition is mutually exclusive from being a liquid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Date et al. (US 2002/0084019) in combination with Orlowski et al. (US 5,510,633).

Date discloses a portion of a chip wafer (1; Par. 0005, Lines 2-3) having a B-stageable underfill (5) comprising a combination of two chemical compositions (Par. 0003; Abstract), characterized in that the first composition (Agent A; *acrylic...*; Abstract comprising language encompasses excluding epoxy) has been cured (Par.0077) and the second composition (Agent B; *epoxy*; Abstract provides that B can contain any component not in A) is inherently uncured (Par. 0078, Lines 4-5); wherein the curing range (Par. 0078, Line3) of the second composition is higher by at least 30 degrees

Celsius than the range than the first composition (Par,0077, Line 7) to allow the first composition to cure without curing the second composition; and the second composition is an epoxy compound and an imidazole/anhydride adduct (Par. 0037).

With respect to the wafer being silicon, since applicant failed to timely traverse examiner's official notice that "silicon was well known at the time the invention was made and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the chip wafer of Date of silicon in order to form a wafer," the well known statement is deemed to be accepted and traversal waived.

Orlowski (Abstract) is provided only to further evidence silicon being well known.

With respect to claims 1 and 7, Date does not appear to explicitly teach process limitations such as a "second composition...dispersible or dissolvable either in the first composition....," or "first composition has been cured at a temperature within the range of 100 degrees....," the prior art structure is the same as the claimed product. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Allowable Subject Matter

Claims 6 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious a first and second underfill composition combined where the second composition is imidazole/anyhydride adduct that is either a complex 1 part 1,2,4,5-benzenetetracarboxylic anhydride an 4 parts 2-phenyl-4-methylimidazole, or a complex 1 part 1,2,4,5-benzenetetracarboxylic dianhydride an 4 parts 2-phenyl-4-methylimidazole including all the limitations the parent claims.

Response to Arguments

Applicant's arguments filed June 2, 2003 have been fully considered but they are not persuasive.

Applicant contends in reference to the 112 rejection "it is unsure how to respond to the rejection because none of its claims recite the first composition is a liquid." Examiner respectfully disagrees. Admittedly in the amendment filed by applicant on September 3, 2003, applicant "inadvertently omitted a previous amendment to the text of the claims," and requested we consider the new amendment with the remarks made June 2, 2003. In light of the admission, applicant's device claim 1, expressly states that the first composition is "liquid" and that the first composition is "cured." Applicant has yet to properly address the 112 rejection and it is still maintained.

As to applicant's arguments "that the first composition does not cure until heat is applied and an even higher temperature is needed for curing the second composition," these arguments are based on process limitations and do not further limit applicant's product of an adhesive that has a cured first composition and a second composition that is uncured. Applicant's arguments are found unpersuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

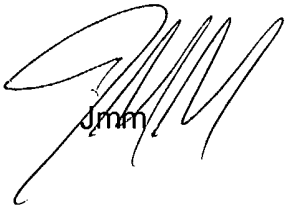
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

Application/Control Number: 10/020,638
Art Unit: 2827

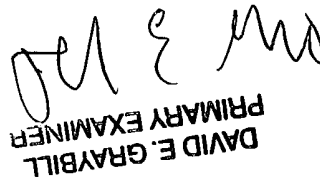
Page 6

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Handwritten signature, possibly reading "Jmm".



Handwritten signature and a stamp that reads "DAVID E. GRAYBILL PRIMARY EXAMINER".